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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/921,303	08/03/2001	Nester P. Murphy	3691-131	5633

7590 09/26/2002

NIXON & VANDERHYE P.C.,
1100 North Glebe Road, 8th Floor,
Arlington, VA 22201

EXAMINER

ROBERTSON, JEFFREY

ART UNIT	PAPER NUMBER
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1712

DATE MAILED: 09/26/2002

9

Please find below and/or attached an Office communication concerning this application or proceeding.

TC-9

Office Action Summary	Application No.	Applicant(s)	
	09/921,303	MURPHY ET AL.	
	Examiner	Art Unit	
	Jeffrey B. Robertson	1712	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 August 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-70 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-70 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-20, 55, and 59-63, drawn to a substrate having an inorganic anchor layer containing silicon, classified in class 428, subclass 446.
 - II. Claims 21-31, drawn to a substrate having an organic silicon coating, classified in class 428, subclass 447.
 - III. Claims 32-43, drawn to a process of forming a hydrophobic coating, classified in class 427, subclass 255.27.
 - IV. Claims 44-49, drawn to a process of forming a multilayer coating, classified in class 427, subclass 249.14.
 - V. Claims 50-54, drawn to a process of forming a hydrophobic coating on a glass substrate, classified in class 427, subclass 255.18.
 - VI. Claims 64-70, drawn to a substrate having a hybridized silicon coating, classified in class 428, subclass 447.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention II has separate utility such as a lubricant. See MPEP § 806.05(d).

3. Inventions I and III are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the process can be used to make an anchor layer containing organic groups on the silicon atom.
4. Inventions I and IV are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the process is used to make a materially different product, since claim 1 does not require the presence of a polydimethylsiloxane.
5. Inventions I and V are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions cannot be used together and have different modes of operation. The process of Group V requires that an organic coating be formed, where the substrate of Group I requires an inorganic coating.
6. Inventions I and VI are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions Groups I and VI are not capable of being used

together and have different modes of operation. Group I requires an inorganic anchor layer, while Group VI requires an organic anchor layer.

7. Inventions II and III are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the substrate of Group II can be made in the presence of heat.
8. Inventions II and IV are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the substrate of Group II can be made with an organic silicon containing underlayer.
9. Inventions II and V are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the substrate of Group II can be made by sequentially contacting a substrate with different chlorosilyl and chloroalkylsilane compounds.

10. Inventions II and VI are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the substrate of Group II may have a silicon dioxide anchor layer. The subcombination has separate utility such as in a combination with a fluorosilane capping layer.
11. Inventions III and IV are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the process of Group II does not require an inorganic anchor layer. The subcombination has separate utility such as a multilayer laminate.
12. Inventions III and V are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because Group III does not require the

particular silanes of Group V and that the silanes be added simultaneously. The subcombination has separate utility such as combinations containing a fluorosilane capping layer.

13. Inventions III and VI are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the substrate of Group VI can be made by a different process, where the coating is applied in the presence of heat.

14. Inventions IV and V are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions cannot be used together and have different modes of operation. Group IV requires that silicon tetrachloride vapor be used to produce a silicon oxide layer, while the process of Group V requires the presence of silicon tetrachloride and trimethylchlorosilane. In addition, the process of Group IV has the production of another layer from silicon tetrachloride and dimethyldichlorosilane.

15. Inventions IV and VI are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions cannot be used together and have different

modes of operation. Group IV produces a silicon oxide anchor layer while Group VI contains a different organic silicon containing anchor layer.

16. Inventions V and VI are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the substrate of Group VI can be produced by reacting trimethylchlorosilane and dimethyldichlorosilane instead of silicon tetrachloride and trimethylchlorosilane.

17. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

18. Claims 1-3, 10-12, and 13-15 are generic to a plurality of disclosed patentably distinct species comprising :

- A. A substrate comprising a reaction product of at least one alkylchlorosilane applied over the anchor layer, Claims 4, 5, 56-58, and 62.
- B. A substrate comprising a layer of a reaction product of dimethyldichlorosilane and a layer of a reaction product of trimethylchlorosilane applied over the dimethyldichlorosilane layer, Claim 6.
- C. A substrate comprising a layer of polysiloxane over the anchor layer, Claims 7, 8, and 55.

- D. A substrate comprising a layer of polysiloxane over the anchor layer and a layer of a reaction product of dimethyldichlorosilane or trimethylchlorosilane over the polysiloxane layer, Claim 9.
 - E. A substrate where the hydrophobic coating is comprised of the reaction product of silicon tetrachloride and an alkylchlorosilane, claims 16-20.
 - F. A substrate comprising a methyltrichlorosilane as a capped layer, Claims 59 and 61.
 - G. A substrate comprising a fluoroalkyl silane as a capped layer, Claims 60 and 63.
19. Claims 21, 28, and 29 are generic to a plurality of disclosed patentably distinct species comprising :
- A. A substrate comprising a chlorosilyl group containing compound and a capping layer that contains a chloroalkylsilane, Claims 22, 24, and 25.
 - B. A substrate that contains an underlayer containing a second chloroalkyl silane, claim 23.
 - C. A substrate containing an underlayer of cross-linked polysiloxane and a capping layer that contains a reaction product of a fluoroalkylsilane, Claims 26, 27, 30, and 31.
20. Claims 64-70 are generic to a plurality of disclosed patentably distinct species comprising :
- A. A substrate comprising a reaction product of alkylchlorosilane, chlorosilane, or both, applied over the anchor layer, Claims 67 and 69.

- B. A substrate comprising a FAS(B) or methyltrichlorosilane capping layer, Claim 70.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species, even though this requirement is traversed.

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

21. Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

22. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

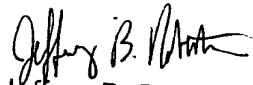
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey B. Robertson whose telephone number is (703) 306-5929. The examiner can normally be reached on Mon-Fri 7:00-3:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert A. Dawson can be reached on (703) 308-2340. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.


Jeffrey B. Robertson
Examiner
Art Unit 1712

JBR
September 24, 2002